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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,335	12/28/2001	Sridhar Gollamudi	4-19	7188

7590 06/21/2004

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER

TRIMMINGS, JOHN P

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,335

Applicant(s)

GOLLAMUDI ET AL.

Examiner

John P Trimmings

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-20 are presented for examination.

Specification

1. The disclosure is objected to because of the following informalities: page 1 line 7 should recite, "10033339 entitled, "ADAPTIVE QUALITY CONTROL LOOP FOR LINK RATE...". Appropriate correction is required.
2. The disclosure is objected to because of the following informalities: page 1 lines 9 and 10 should recite, "10033338 entitled, "MULTI-CHANNEL ADAPTIVE QUALITY CONTROL LOOP FOR LINK RATE...". Appropriate correction is required.
3. The disclosure is objected to because of the following informalities: page 10 line 31 should recite "the MCS level to be used...". Appropriate correction is required.
4. The disclosure is objected to because of the following informalities: page 11 line 24 should recite "successful transmission[s]". Appropriate correction is required.

Claim Objections

5. Claim 1 is objected to because of the following informalities: information in a claim that is enclosed in parenthesis does not hold patentable weight, in this case, "(MCS)". The examiner suggests that the parenthesis be removed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 14 recites the limitation "the first variable step" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3-6 and 10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klayman et al., U.S. Patent No. 5699365, in view of Ngoc et al., U.S. Patent No. 6539031, and further in view of Kang et al., "Region and Time Based Unequal Error Protection for Video Transmission over Mobile Links".

As per Claims 1 and 10:

Klayman et al. teaches an adaptive quality control loop for a wireless communication for error correction (see Klayman et al. Title) comprising the steps of: adjusting a first or second channel condition threshold (Klayman et al. FIG.4 340) level used in a transmission of a first or second data packet (Klayman et al. FIG.5 405) in response to any error detection result associated with the transmission of the first data packet (Klayman et al. FIG.4 330). Klayman et al. however fails to specify a first

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modulation and coding scheme, and if the data belongs to a first or second category. In an analogous art, Ngoc et al. teaches adjusting the first or second channel condition threshold in response to a last error detection result associated with the transmission of the first data packet (Ngoc et al. column 26 lines 13-65), the activity being associated with a first or second modulation and coding scheme (see Abstract). In column 1 lines 62-67 and column 2 lines 1-22, Ngoc et al. recites a need to adaptively compensate for precipitation, among other types of interference, in a wireless environment. One with ordinary skill in the art at the time of the invention, motivated by Ngoc et al. as suggested, would have found it obvious to apply the adaptive process of Ngoc et al. to the process of Klayman et al. in order to provide a system which would react quickly to changing conditions. But neither Klayman et al. nor Ngoc et al. teach a condition threshold adjustment based on data category and in a temporal manner. However, the work of Kang et al. teaches that by adapting rate changes to video errors on a frame by frame basis instead of a overall group basis (Abstract, page 512 column 1 last paragraph and column 2, error protection is improved (Table 1, Table 2). This improvement in error protection would be the motivation to one with ordinary skill in the art at the time of the invention, to provide a higher priority to video error protection as taught by Kang et al. And this higher priority would include real-time temporal (frame by frame) feedback for one category, as opposed to a lower priority normal feedback for another category.

As per Claim 3:

Klayman et al. further teaches the adaptive quality control loop of claim 1, wherein the last error detection result is an error detection result that indicates a successful transmission of the first data packet (see FIG.4 330 to 350 and RETURN).

As per Claim 4:

Klayman et al. further teaches the adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted using a fixed step (FIG.5 405 INITIAL).

As per Claim 5:

Klayman et al. further teaches the adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted using a first variable step (FIG.4 340 or 360).

As per Claim 6:

Ngoc et al. further teaches the adaptive quality control loop of claim 5, wherein the step of adjusting the first channel condition threshold comprises the step of: determining the first variable step using a desired MCS error rate (column 29 lines 54-61) for the first MCS level (column 31 lines 1-6).

As per Claims 12 and 13:

Klayman et al. further teaches the adaptive quality control loop of claim 1, wherein the channel condition threshold is incremented or decremented (FIG.4 340 or 360) and so the claims are rejected.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klayman et al., U.S. Patent No. 5699365, in view of Ngoc et al., U.S. Patent No. 6539031, and in

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view of Kang et al., "Region and Time Based Unequal Error Protection for Video Transmission over Mobile Links" as applied to Claim 1 above, and further in view of Chen et al., U.S. Patent No. 6658919. The references of Claim 1 above fail to teach wherein the first category includes data packets which are delay sensitive and the second category includes data packets which are delay insensitive. But in the analogous art of Chen et al., this feature is taught (column 1 lines 40-60) whereby 2 classes of data are created, each with a different level of sensitivity to delay. And in column 1 lines 5-38, the advantage to sensitivity classification is a more efficient allocation of resources for a given level of protection. One with ordinary skill in the art at the time of the invention, motivated as suggested to improve protection as in Chen et al., would find it obvious to add this feature of unequal error protection to the teachings of the references of Claim 1 above, and so the claim is rejected.

9. Claims 11, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klayman et al., U.S. Patent No. 5699365, in view of Ngoc et al., U.S. Patent No. 6539031, in view of Kang et al., "Region and Time Based Unequal Error Protection for Video Transmission over Mobile Links", and further in view of Ayanoglu et al., U.S. Patent No. 5600663.

As per Claim 11:

Ayanoglu et al. further teaches the adaptive quality control loop of claim 10, wherein the first channel condition is adjusted a first step based on an error detection result (FIG.3 305) associated with the transmission of the first data packet (FIG.3 303), and the second channel condition is adjusted a second step based on an

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error detection result associated with the transmission of the second data packet (FIG.3 same process, 303, 305). In other words, for each and every transmission of a data packet, Ayanoglu et al. adjusts condition accordingly. Ayanoglu et al., in column 1 and column 2 cites the advantage of system overhead being minimized by an adaptive FER based on errors occurring in a transmission. And one with ordinary skill in the art at the time of the invention, motivated as cited, would find it obvious to combine the adaptive characteristics of Ayanoglu et al. to the references cited for Claim 10 for the purpose of improving overall system value, so the claim is rejected.

As per Claim 14:

Ayanoglu et al. further teaches the adaptive quality control loop of claim 1, wherein the first variable step is determined using an error detection result (FIG. 3 305). And in view of the motivation cited above, the claim is rejected.

As per Claim 15:

Kang et al. further teaches the adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted based on the last error detection result if the first data packet belongs to the second category. This low priority mode of feedback is taught by Kang et al. in that it teaches that by adapting rate changes to video errors on a frame by frame basis instead of a overall group basis (Abstract, page 512 column 1 last paragraph and column 2, error protection is improved (Table 1, Table 2). This improvement in error protection would be the motivation to one with ordinary skill in the art at the time of the invention, to provide a higher priority to video error protection as taught by Kang et al. And this higher priority would include

real-time temporal (frame by frame) feedback for one category, as opposed to a lower priority normal feedback for another category.

As per Claims 16 and 19:

Klayman et al. further teaches the adaptive quality control loop of claim 15, wherein the first channel condition threshold is adjusted an up step if the last error detection result indicates a failed transmission of the first data packet (FIG.4 360).

As per Claims 17 and 20:

Klayman et al. further teaches the adaptive quality control loop of claim 15, wherein the first channel condition threshold is adjusted a down step if the last error detection result indicates a successful transmission of the first data packet (FIG.4 340).

As per Claim 18:

Ayanoglu et al. further teaches the adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted based on an average of all error detection results associated with any transmission of the first data packet (column 7 lines 41-49) if the first data packet belongs to the second category. This second category of feedback is taught by Kang et al. in that it teaches that by adapting rate changes to video errors on a frame by frame basis instead of a overall group basis (Abstract, page 512 column 1 last paragraph and column 2, error protection is improved (Table 1, Table 2). This improvement in error protection would be the motivation to one with ordinary skill in the art at the time of the invention, to provide a higher priority to video error protection as taught by Kang et al., or a lower priority, as provided herein. And this higher priority would include real-time temporal (frame by frame) feedback for

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one category, as opposed to a lower priority normal feedback for a second category, such as in this claim.

10. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klayman et al., U.S. Patent No. 5699365, in view of Ngoc et al., U.S. Patent No. 6539031, in view of Kang et al., "Region and Time Based Unequal Error Protection for Video Transmission over Mobile Links", and further in view of Morris et al., U.S. Patent No. 6314535.

As per Claim 7:

The adaptive quality control loop of claim 6 fails to teach further, wherein the desired MCS error rate for the first MCS level is based on a block error rate target criterion. However, in an analogous art, Morris et al. does teach this feature in column 24 lines 6-31. And in column 2 lines 8-25, the invention states an advantage of maximizing bearer data as opposed to redundant data. One with ordinary skill in the art at the time of the invention, motivated by Morris et al. as suggested, would find it to be obvious in applying the teachings of Morris et al. to the method previously outlined in Claim 6 above, with the intent of producing a better error protection scheme, thus the claim is rejected.

As per Claim 8:

Morris et al. further teaches the adaptive quality control loop of claim 6, wherein the desired MCS error rate for the first MCS level is based on a bit error rate target criterion (column 24 lines 32-42). And in view of the motivation previously stated, the claim is rejected.

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As per Claim 9:

Morris et al. further teaches the adaptive quality control loop of claim 5, wherein the step of adjusting the first channel condition threshold comprises the step of: determining the first variable step using a block or bit error rate target criterion (column 24 lines 7-42) and a first data rate associated with the first MCS level (Ngoc et al. column 31 lines 1-6). And in view of the motivation previously recited for all of the above references, the claim is rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is 703-305-0714. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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John P Trimmings
Examiner
Art Unit 2133

jpt



for
Albert DeCady
Primary Examiner